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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,899	12/14/2001	Loic Brunel	217148US2	4199

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EXAMINER

CORRIELUS, JEAN B

ART UNIT PAPER NUMBER

2611

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,899

Applicant(s)

BRUNEL, LOIC

Examiner

Jean B. Corielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/14/02&12/12/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as **"means"** and **"said,"** should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. In addition, please remove reference to "fig. 3" and delete the title.

Drawings

3. The drawings are objected to because please submit a flowchart in order to clearly show the claim steps. In addition descriptive language should be used along each reference number to identify each component of the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top

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margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1-16 are objected to because of the following informalities: claim 1, should be amended to recite positively the different claims steps in such a way as to improve the claim language and to conform with US Practice. For instance, claim 1, line 4 can be amended to insert "the steps of" after "comprising"; the body of the claim can be amended as follow to include not limited to:

"filtering ($310_1, \dots, 310_k$) [**said**] a received signal to generate a complex vector ($y(i), \dots$);
decomposing said complex vector ($y(i), \dots$) into a first vector ... and a second vector;
determining at least the closest neighbors of the first and second vectors;
estimating the"

Claim 1, line 2, "for" should be replaced by "to" line 3, after "sequence", " $(S_k(t))$ " should be inserted so as to provide proper antecedent basis for the subsequent limitation recited in claim 2, line 2. claim 1, line what does it mean by "**closest neighbors** of the first and second vectors"?

Claim 2, line 1, "detection" should be deleted. The same comment applies to claims 3-14, respectively. In addition, claim 2, line 2 recites "sequences" while claim 1, line 3, recites "sequence" please correct.

Claim 5 what does it means by " the first and second predetermined zones are spheres"?

Claim 6, line 5, what does it mean by "said interval **does not compromise** points relating to symbols **which cannot belong to the** modulation constellation"? The same comment applies to claim 7. Appropriate correction is required.

Claim 8, shouldn't "aimed at substantially decorrelating" be replaced by "to substantially decorrelate"? The same comment applies to claim 9.

Claim 10, what does it mean by "symbols are estimated **flexibly**" it is suggested that an alternate language be used; last two lines what does it mean by "on the one hand" and "on the other hand"? It is suggested that an alternate language be used.

Claim 11, what does it mean by "the **contributions** of each user"?

Claim 14, recites "the different users which may interfere" however the claim does not set forth as to what the different users may interfere to.

Claim 16, line 2, "detection" should be deleted.

Correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

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connected, to make and/or use the invention. Claim 13 recites a device comprising means for implementing the method claimed according to one of the preceding claim. Such claim, consequently, is considered as a single means since the "means for implementing" does not appear in combination with another recited element of means. Consequently, such claim is considered as a single means claim and is therefore nonenabling. See MPEP 2164.08(a). The same comment applies to claim 16.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 6, "said received signal" lacks of proper antecedent basis.

Claim 3, line 2, "the search" lacks of proper antecedent basis. The same comment applies to similar limitations recited in claims 4, 6-8 and 10.

As per claim 4, it is unclear as to what applicant refers to as "the origin".

As per claim 8, line 4, "the different noise components" lacks of proper antecedent basis.

Claim 11, line 3, "the signals" lacks of proper antecedent basis. last line "the output of the filtering step" lacks of proper antecedent basis in addition such limitation is unclear because it is not clear as to what applicant refers to as the "output of the filtering step".

As per claim 12, "the received signal" lacks of proper antecedent basis; last line "the input of the filtering step" lacks of proper antecedent basis in addition such limitation is unclear because it is not clear as to what applicant refers to as the "input of the filtering step".

Claim 14, the limitation "may interfere" renders the claim vague and indefinite.

Note that any claim whose base claim is rejected is likewise rejected.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 13 recites a device comprising means for implementing the method claimed according to one of the preceding claim. Such claim, consequently, is considered as a single means since the "means for implementing" does not appear in combination with another recited element of means. Consequently, such claim is considered as a single means claim and is therefore nonenabling. See MPEP 2164.08(a). The same comment applies to claim 16.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Li US patent No. 6,301,315.

Li discloses a method and apparatus fig. 6 comprising filtering a received signal using filter 610 to produce complex vectors see col. 5, lines 10-12, the complex vectors include (decompose into) first vector and second vector see col. 5, lines 16-17 the symbols closest to the first and second vectors are found within a constellation (lattice) of symbols see col. 5, lines 15-18 and the transmitted symbols are estimated based on said closest symbol(s) see col. 6, lines 40-44 and lines 51-53.

As per claim 15, the method is implemented using fig. 6.

As per claim 16 the detection device is embodied in a receiver see fig. 6.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li US patent No. 6,301,315.

As per claim 2, Li discloses every feature of the claimed invention but does not explicitly teach using a spreading sequence consisting of real multiples of the same complex coefficient. However, the use of a spreading sequence consisting of real multiples of the same complex coefficient is old and well known in the art. Given that, it would have been obvious to one skill in the art to modify Li et al in such a way as to use of a spreading sequence consisting of real multiples of the same complex coefficient in order to be able to generate only desired PN sequence necessary to scramble the information signal.

Allowable Subject Matter

15. Claims 3-14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments


16. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Maxi-Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jean B. Corrieus
Primary Examiner
Art Unit 2611

7-7-06